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School District Expenditures for Elementary and Secondary Education: 1997–98

U.S. Department of Education
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Statistical Analysis Report

October 2003

Joel D. Sherman
Barbra Gregory
Jeffrey M. Poirier
Xiaolan Ye
American Institutes for Research

Frank Johnson
Project Officer
National Center for Education Statistics

U.S. Department of Education
Rod Paige
Secretary

Institute of Education Sciences
Grover J. Whitehurst
Director

National Center for Education Statistics
Val Plisko
Associate Commissioner

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Content Contact:

Frank Johnson
202–502–7362
Frank.Johnson@ed.gov

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Executive Summary

Introduction

The "School District Financial Survey" (Form F-33) is an annual survey of school district financial data that is part of the Common Core of Data (CCD). The F-33 collects data on revenues and expenditures for prekindergarten through grade 12 in public schools in approximately 15,500 local education agencies (LEAs) in the 50 states and the District of Columbia.

This report presents analyses of school district expenditures for the 1997–98 school year. The F-33 data form the core of these analyses, but information is supplemented by data on selected school district demographic and fiscal characteristics from the *1990 School District Data Book*, prepared by the U.S. Census Bureau.[1]

Analyses of school district expenditures are presented for the nation and the states. The national analyses focus on expenditures in school districts in different geographical regions, of different size, with different fiscal capacity to support education (measured by median household income and median housing value), with different proportions of minority enrollment and with different poverty rates. The state analyses focus on interdistrict variation in expenditures per pupil, and the relationship between expenditures per pupil and the school district fiscal and demographic characteristics cited in the national analyses.

The analyses of expenditures presented in this report are based on both actual dollars and cost-adjusted dollars. Cost adjustments are designed to take into account differences in the cost of education across school districts in a state. The cost adjustment used in these analyses is the Geographic Cost of Education Index (GCEI), which uses school districts as the geographic area (Fowler and Monk 2001; Chambers 1998). The GCEI was developed using data from the 1993–94 Schools and Staffing Survey and works with three categories of school inputs: certified school personnel, noncertified school personnel, and nonpersonnel school items. The index reflects how much more or less it costs in different geographic locations to recruit and employ comparable school personnel, as well as the varying cost of nonpersonnel items such as purchased services, supplies and materials, furnishings and equipment, travel, utilities, and facilities.

All analyses presented in this report are for the 1997–98 school year. Although most school finance relationships tend to be relatively stable over time, changes often occur as a result of changes in state funding formulas. The relationships observed for the 1997–98 school year may therefore differ from those observed in earlier or later years.

[1]While more current census data on district characteristics are now available, the 1990 census data were used in these analyses because they were the most current data available at the time the report was planned and written. The national analyses include districts in all states, even when the percentage of districts with demographic and fiscal data was less than 50 percent of the total districts in the state. The state analyses, however, only included the 40 states in which at least 50 percent of the districts had demographic and fiscal data.

In the next section, the major findings of the report are presented using cost-adjusted expenditures. Findings based on actual expenditures are included in the body of the report.

National Findings

The national findings focus on three areas: total expenditures and expenditures in different geographic regions, expenditures in school districts of different size, and the relationship between expenditures and selected school district fiscal and demographic characteristics.

Total Expenditures and Expenditures in Different Geographic Regions

Cost-adjusted school district expenditures for elementary and secondary education totaled $324.7 billion in the 1997–98 school year, or about $7,138 per pupil (table 2-1). The largest share of total school expenditures was for current expenditures—$273.1 billion, or about 84 percent of the total (table 3-1). Capital expenditures of $35.3 billion made up almost 11 percent of the total. The remaining $16.4 billion was used for nonelementary and nonsecondary programs and expenditures by LEAs (NCES 1998).

Cost-adjusted expenditures per pupil for education were highest in the Northeast for seven of the eight expenditure measures (table 5-1). Expenditures for administration were highest in the Midwest. With the exception of expenditures for plant maintenance and operation, which were lowest in the South, expenditures per pupil for all other education functions were consistently lowest in the West.

Expenditures in School Districts of Different Size

Cost-adjusted expenditures per pupil for most school functions were generally highest in small school districts and lowest in large districts (table 5-2). Per pupil expenditures were highest in districts with fewer than 1,000 students for all functions except student and instructional staff support. This was the one function for which expenditures per pupil were highest in the largest districts (with 10,000 or more students) and lowest in the smallest districts (with fewer than 1,000 students). The other expenditure measure for which expenditures per pupil were not lowest in the largest districts, administration expenditures per pupil, were lowest in districts with between 5,000 and 9,999 students.

Relationship Between Expenditures and School Districts' Fiscal Capacity

For the nation as a whole, there was a weak relationship between school districts' fiscal capacity (measured by median household income and median value of owner-occupied housing) and cost-adjusted expenditures per pupil (table 5-4). The correlation between median household income and cost-adjusted current expenditures per pupil was +0.03; the correlation between median housing value and current expenditures per pupil was statistically insignificant. Correlations between these two measures of district fiscal capacity and all other measures of cost-adjusted expenditures per pupil were also weak or statistically insignificant.

Relationship Between Expenditures and School Districts' Demographic Characteristics

Minority enrollment in a school district and the district poverty rate also showed weak relationships with cost-adjusted expenditures per pupil (table 5-4). Correlations between these two school district

demographic characteristics and all measures of cost-adjusted expenditures per pupil were either weak or statistically insignificant.

State Findings

The state findings focus on two areas: interdistrict variation in expenditures per pupil, and the relationship between expenditures and selected school district fiscal and demographic characteristics.

Interdistrict Variation in Expenditures Per Pupil

States differ substantially in the amount of interdistrict variation in expenditures per pupil. Using the synthesized measure of variation, 12 states had the largest overall variation in cost-adjusted expenditures per pupil (table 5-5). Of these 12 states, 4 (Alaska, Idaho, Montana, and Wyoming) were in the West, 2 (Massachusetts and New Hampshire) were in the Northeast, and 6 (Illinois, Kansas, Missouri, Nebraska, North Dakota, and South Dakota) were in the Midwest. No state in this group was from the South.

Illinois, Montana, and North Dakota were in the quartile of states with the greatest interdistrict variation on all components of expenditures per pupil, while Alaska was in this quartile for six measures of expenditures per pupil (table 5-5).

At the other end of the spectrum were 12 states with the weakest interdistrict variation in cost-adjusted current expenditures per pupil (table 5-6). Of these 12 states, 9 (Alabama, Delaware, Florida, Kentucky, Louisiana, Maryland, North Carolina, South Carolina, and West Virginia) were in the South, 2 (Iowa and Wisconsin) were in the Midwest, and 1 (Nevada) was in the West.

Four states (Delaware, Florida, Nevada, and North Carolina) were in the quartile of states with the weakest overall variation on all measures of expenditures per pupil, and two other states (Alabama and West Virginia) were in this quartile for six components of expenditures per pupil.

Relationship Between Expenditures and School Districts' Fiscal Capacity

Median Household Income

Among the 40 states with adequate data for analysis, 5 states (Illinois, Louisiana, New York, Pennsylvania, and Virginia) showed a moderate positive correlation between median household income and cost-adjusted current expenditures per pupil; no state had a strong positive correlation between income and current expenditures (table 5-9). On the other hand, median household income was negatively related to cost-adjusted current expenditures per pupil in 24 states, with 5 states (Alaska, Arizona, Iowa, Utah, and Washington) having a strong negative correlation between these variables.

In cost-adjusted dollars, 11 states showed a positive relationship between median household income and at least one measure of expenditure (table 5-8). Household income was related to all eight expenditure measures in one state (New York) and to seven of the eight expenditure measures in four other states (Illinois, Louisiana, Pennsylvania, and Virginia) (table 5-9). In contrast, there was a negative relationship between median household income and at least one expenditure measure in 27 states. Five states (Arizona, Indiana, Missouri, Montana, and Nebraska) showed a negative relationship between

household income and all eight measures of expenditure. Another 13 states (Alaska, California, Florida, Iowa, Kansas, Maine, Minnesota, North Dakota, Oregon, Texas, Utah, Washington, and West Virginia) showed a negative relationship between household income and at least six expenditure measures.

Median Housing Value

District property values, as measured by median housing value, were positively related to cost-adjusted current expenditures per pupil in more states than median household income (table 5-12). For the 40 states with adequate data, 5 states (Illinois, Massachusetts, Ohio, Pennsylvania, and Vermont) had a moderate positive correlation between median housing value and current expenditures per pupil, and 1 state (Virginia) had a strong positive correlation (table 5-12). On the other hand, median housing value was negatively related to current expenditures per pupil in 17 states, with 5 states (Alaska, Iowa, Montana, Nebraska, and West Virginia) having a strong negative correlation between these variables.

Twenty-three states showed a positive relationship between median housing value and at least one measure of expenditure (table 5-11). Median housing value was positively related to all eight expenditure measures in one state (Virginia) and to at least six of the eight expenditure measures in four other states (Illinois, Maryland, Ohio, and Pennsylvania). In contrast, there was a negative relationship between median household income and at least one expenditure measure in 25 states. One state (Arizona) had a negative relationship between median housing value and all eight measures of expenditure. Another 13 states (Alaska, California, Indiana, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, Texas, Utah, and Washington) showed a negative relationship between household income and at least six expenditure measures.

Relationship Between Expenditures and School Districts' Demographic Characteristics

Minority Enrollment

For the 40 states with adequate data, 19 states had a positive correlation between minority enrollment and cost-adjusted current expenditures per pupil (table 5-15). Five states (Kansas, Nebraska, New Hampshire, New York, and Pennsylvania) had a moderate negative correlation between minority enrollment and cost-adjusted current expenditures.

In cost-adjusted dollars, 35 states showed a positive relationship between minority enrollment and at least one measure of expenditure (table 5-14). Minority enrollment was positively related to all eight measures of expenditure in seven states (Arizona, Indiana, Massachusetts, Minnesota, Missouri, Montana, and Ohio) and to at least six of the eight expenditure measures in another six states (Alaska, Michigan, North Dakota, Oregon, South Carolina, and Wisconsin).

District Poverty Rate

For the 40 states with adequate data, 27 states had a positive correlation between the district poverty rate and cost-adjusted current expenditures per pupil (table 5-18). Three states had a negative correlation between the district poverty rate and cost-adjusted current expenditures per pupil.

Thirty-three states showed a positive relationship between the district poverty rate and at least one cost-adjusted measure of expenditure per pupil (table 5-17). The district poverty rate was positively related

to all 8 expenditure measures in 10 states (Arizona, Indiana, Kansas, Massachusetts, Minnesota, Missouri, Montana, North Dakota, Utah, and Washington) and to at least 6 of the 8 expenditure measures in another 11 states (Alaska, California, Florida, Michigan, Nebraska, Oregon, South Carolina, Tennessee, Texas, Wisconsin, and Wyoming). Eight states (Illinois, Louisiana, Maryland, Michigan, New York, Pennsylvania, Rhode Island, and West Virginia) had a negative relationship between the district poverty rate and at least one measure of expenditure.

Organization of the Report

Including the introduction (chapter 1), the report has five chapters. Chapter 2 presents an analysis of total expenditures, including current and capital expenditures. Chapter 3 examines current expenditures, including expenditures for salaries and employee benefits. Chapter 4 examines expenditures for four education functions: instruction, pupil support and instructional staff support services, administration, and plant maintenance and operations services. Chapter 5 presents a synthesis and summary of the report's major findings. Appendices to the report contain technical notes and detailed correlation tables on district expenditures.

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Chapter 1: Introduction

Background and Introduction

The financing of elementary and secondary education is always an important issue for policymakers at the national, state, and local levels. Even during times of economic growth, education must compete with other public functions for the taxpayer's dollar; during periods of economic slowdown, that competition is even more intense. In addition, issues of equity and productivity invariably enter into the public debate, as policymakers seek to ensure equitable access to education for all children and the most effective use of public funds.

Looking at education spending nationally is necessary to understand the overall investment of the United States in education and how much funding is used for various purposes. Since spending within states is generally not uniform across school districts, it is important not only to look at average spending levels in the states, but to also examine variation in spending across school districts and district characteristics that may be associated with differences in expenditure levels.

This report is designed to address a number of important questions about the financing of public elementary and secondary education at the state and district levels. These questions are:

- How much money do school districts spend for elementary and secondary education? How much do school districts spend for instruction and other education functions? How much do school districts spend for salaries and fringe benefits for employees?
- What is the level of variation in expenditures per pupil across school districts nationally and in each state?
- How do district demographic and economic characteristics relate to expenditures per pupil nationally and in each state? How strong are these relationships?

Data Sources

The primary source of data for this report on school district financing of elementary and secondary education was the 1997–98 "School District Financial Survey (Form F-33)." The F-33 is an annual district-level collection of revenue and expenditure data in grades prekindergarten through 12. It is part of the Common Core of Data (CCD) collection of surveys and administrative-records data relating to public elementary and secondary education. In 1997–98, the F-33 data file contained 15,512 districts across the United States enrolling 45,772,962 students (table 1-1). Since data from the F-33 file are not available until at least two years after the end of a given school year, 1997–98 data were the most current data available when this research was undertaken.[1] Data on revenues and expenditures col-

[1]It is important to note that the use of 1997–98 data limits the analyses since it does not allow for comparisons of data over time.

Table 1-1. Total number of school districts, students, and total expenditures, by state: 1997–98

State	Number of school districts	Number of students	Expenditures (in thousands)
United States	15,512	45,772,962	336,384,794
Alabama	127	739,321	4,245,033
Alaska	53	130,633	1,222,893
Arizona	230	794,331	4,726,098
Arkansas	326	456,355	2,536,027
California	1,077	5,727,224	38,087,666
Colorado	195	686,360	4,739,136
Connecticut	174	515,141	4,810,851
Delaware	19	111,428	915,207
District of Columbia	1	77,111	716,740
Florida	67	2,292,161	15,155,383
Georgia	196	1,375,980	8,990,897
Hawaii	1	189,887	1,266,378
Idaho	112	244,403	1,342,719
Illinois	1,046	1,972,406	15,207,067
Indiana	315	985,690	7,649,103
Iowa	392	501,054	3,650,286
Kansas	304	468,980	3,087,318
Kentucky	176	645,232	4,018,512
Louisiana	66	774,561	4,379,797
Maine	292	212,038	1,601,411
Maryland	24	830,744	6,519,389
Massachusetts	392	942,331	8,098,720
Michigan	719	1,680,559	14,905,765
Minnesota	416	841,723	6,815,289
Mississippi	152	504,792	2,543,454
Missouri	525	909,441	5,849,648
Montana	483	162,164	1,007,146
Nebraska	657	291,570	1,966,403
Nevada	17	296,621	2,030,065
New Hampshire	177	196,734	1,428,447
New Jersey	615	1,238,948	13,973,201
New Mexico	89	331,673	1,933,538
New York	690	2,834,992	29,853,891
North Carolina	117	1,230,010	7,688,076
North Dakota	260	116,813	715,126
Ohio	727	1,846,585	13,005,301
Oklahoma	586	623,681	3,617,938
Oregon	220	540,226	3,939,722
Pennsylvania	605	1,791,100	16,432,921
Rhode Island	36	152,356	1,221,558
South Carolina	98	648,084	4,241,163
South Dakota	176	133,698	781,279
Tennessee	138	876,693	4,988,208
Texas	1,063	3,888,061	25,723,965
Utah	40	480,811	2,326,611
Vermont	328	101,413	1,064,388
Virginia	155	1,110,815	7,813,707
Washington	305	991,235	7,211,601
West Virginia	55	300,737	2,100,841
Wisconsin	430	881,552	7,532,110
Wyoming	48	96,504	706,801

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

lected through the F-33 were supplemented with data from the U.S. Census Bureau, *1990 School District Data Book*, which contain 1990 decennial census school district demographic and fiscal characteristics. These data are also called Census Mapping Data. Minority enrollment, district poverty rate, median household income, and median housing value data were used from the Census Mapping Data.

While more current census data on district characteristics are now available, the 1990 census data were used in these analyses because they were the most current data available at the time the report was planned and written. Although, overall, demographic characteristics may have remained relatively constant over time, readers should be aware that there may be individual districts whose demographic characteristics changed between 1990 and 1997. It is difficult to say what the effect of updated census demographic data would have on the analysis in this report.[2]

Methods of Analysis

The analysis focuses on expenditures for education. It includes analyses of total expenditures (current and capital expenditures combined), current expenditures, selected expenditure functions (instruction, instructional support services, administration, and plant maintenance and operations), and expenditures for salaries and fringe benefits for school employees. Each of the analyses presented in the report contains two parts. One is a national analysis of school district expenditures. The second is an analysis of school district expenditures in the 50 states. Both the national analyses and the state analyses are presented using two types of expenditure measures. One is a measure of ***actual expenditures***. These figures represent the amount of money school districts actually spend on education and are the figures they report as expenditures in their audited financial records and in financial reports to the state. The second component is an analysis of ***cost-adjusted expenditures*** per pupil at the national level. "Cost-adjusted" expenditures are designed to take into account differences in the cost of education across school districts. The cost adjustment used in these analyses is the Geographic Cost of Education Index, which uses school districts as the geographic area. (GCEI) (Fowler and Monk 2001; Chambers 1998). The GCEI was developed using data from the 1993–94 Schools and Staffing Survey and works with three categories of school inputs: certified school personnel, noncertified school personnel, and nonpersonnel school items. The index reflects how much more or less it costs in different geographic locations to recruit and employ comparable school personnel, as well as the varying costs of nonpersonnel items such as purchased services, supplies and materials, furnishings and equipment, travel, utilities, and facilities.

Although cost-adjusted expenditures allow for greater comparability of expenditures across school districts and states, the report includes "actual" expenditures, in addition to cost-adjusted expenditures, for a few reasons. First, "actual" expenditures are the figures that appear in both official reports and other communications to policymakers, education administrators and teachers, and the general public. Second, a number of adjustment procedures could have been used to take into account cost-of-education differences across communities (McMahon 1996). Because only the GCEI was selected for use in this report, it was important to include analyses using the data as they were reported in order to give readers a second perspective.

[2]Districts may be missing data due to changes in district boundaries and/or consolidations between 1990 and 1997–98. Further, some districts do not have census data mapped to them in the Census Mapping File because they were created after the 1990 census.

National Analyses

The national analyses of school district expenditures first present total education expenditures per pupil for all school districts in the nation. They then present average expenditures per pupil for school districts in different geographic regions, school districts of different size, school districts with different fiscal capacity to support education, and school districts with different proportions of minorities and district poverty rates. The two measures of fiscal capacity used in the analysis are median household income and median housing value.

Expenditures per pupil are calculated by dividing expenditures during the 1997–98 school year by the fall 1997 student enrollment in each district. Average expenditures per pupil for school districts in different regions and for school districts with different demographic and fiscal characteristics are calculated as ***weighted averages***; each district's weight is the number of students enrolled in fall 1997. Expenditures per pupil are calculated for each cell and large districts have a greater impact on the estimate than smaller districts.

Analyses of "actual" or "unadjusted" expenditures use a subset of districts on the F-33 file, with nonoperating and special school districts removed. This subset file contains 14,254 school districts or about 92 percent of the districts in the original file (table 1-2). It also contains almost all students (135,827 or 0.3 percent are removed) and 97 percent of total expenditures in the original file.

Districts designated as "college-grade," "vocational or special education," "nonoperating," and "education service agency" were not included in the analysis since these are not school districts that provide the regular elementary and secondary school programs. Districts with total revenues and total expenditures reported as "zero" or "missing" and special districts for vocational education, technical education, special education, and agricultural education were also removed from the original file.

Although only 8 percent of districts are removed from this subset file, it is important to note that the remaining school districts are organized in diverse ways across the states. In 15 states and the District of Columbia, all regular school districts are unified districts that include both elementary and secondary schools, and in 15 states, over 90 percent of the districts are unified districts (table 1-3). In contrast, in 20 states there are relatively fewer unified school districts and a larger number of separate elementary and secondary districts. In Arizona, California, Illinois, Maine, Montana, Nebraska, New Hampshire, New Jersey, and Vermont fewer than 50 percent of the school districts are unified districts. In Illinois, for example, 43 percent of the school districts are elementary districts, 12 percent are secondary districts, and only 45 percent are unified districts.

In most states, a large percentage of students in regular school districts are in unified districts (table 1-4). In 42 states and the District of Columbia, more than 90 percent of students are in unified school districts. In contrast, in eight states there are relatively fewer students in unified districts. For example, in Montana and Vermont fewer than 50 percent of students are in unified districts. In Vermont 45 percent of students are in elementary districts, 21 percent in secondary districts, and only 34 percent in unified districts.

Cost-of-education adjustments were not available for all school districts in the F-33 file. One hundred and seventy-seven districts without GCEI data were therefore removed from these analyses. The analyses of cost-adjusted expenditures therefore contained 14,077 school districts or about 91 percent of the districts in the original F-33 file. The districts in this file contained about 99 percent of the students enrolled in elementary and secondary education in fall 1997. (Table 1-5 presents data on the number of

Table. 1-2. Total number of school districts and students for regular school districts and percentages based on all school districts, by state: 1997–98

State	Number of school districts	Percent of school districts	Number of students	Percent of students	Percent of expenditures
United States	14,254	92.0	45,637,135	100.0	97.2
Alabama	127	100.0	739,321	100.0	100.0
Alaska	53	100.0	130,633	100.0	100.0
Arizona	215	93.5	794,325	100.0	99.2
Arkansas	310	95.1	453,779	99.4	97.4
California	988	91.7	5,664,044	98.9	93.7
Colorado	176	90.3	686,360	100.0	99.0
Connecticut	166	95.4	515,141	100.0	99.9
Delaware	16	84.2	105,697	94.9	91.4
District of Columbia	1	100.0	77,111	100.0	100.0
Florida	67	100.0	2,292,161	100.0	100.0
Georgia	180	91.8	1,375,980	100.0	99.4
Hawaii	1	100.0	189,887	100.0	100.0
Idaho	112	100.0	244,403	100.0	100.0
Illinois	896	85.7	1,971,705	100.0	97.5
Indiana	292	92.7	985,690	100.0	98.7
Iowa	377	96.2	501,054	100.0	93.7
Kansas	304	100.0	468,980	100.0	100.0
Kentucky	176	100.0	645,232	100.0	100.0
Louisiana	66	100.0	774,561	100.0	100.0
Maine	227	77.7	212,038	100.0	98.5
Maryland	24	100.0	830,744	100.0	100.0
Massachusetts	298	76.0	912,500	96.8	95.6
Michigan	656	91.2	1,679,792	100.0	91.7
Minnesota	348	83.7	841,723	100.0	96.5
Mississippi	149	98.0	503,635	99.8	99.8
Missouri	522	99.4	901,668	99.1	96.9
Montana	457	94.6	162,164	100.0	99.1
Nebraska	622	94.7	291,570	100.0	96.5
Nevada	17	100.0	296,621	100.0	100.0
New Hampshire	163	92.1	196,734	100.0	99.6
New Jersey	552	89.8	1,215,967	98.1	95.0
New Mexico	89	100.0	331,673	100.0	100.0
New York	687	99.6	2,834,082	100.0	99.9
North Carolina	117	100.0	1,230,010	100.0	100.0
North Dakota	231	88.8	116,813	100.0	93.4
Ohio	611	84.0	1,846,585	100.0	93.3
Oklahoma	548	93.5	623,681	100.0	92.2
Oregon	198	90.0	540,226	100.0	94.2
Pennsylvania	500	82.6	1,791,100	100.0	90.6
Rhode Island	36	100.0	152,356	100.0	100.0
South Carolina	86	87.8	648,084	100.0	99.5
South Dakota	173	98.3	133,698	100.0	99.9
Tennessee	137	99.3	876,693	100.0	100.0
Texas	1,041	97.9	3,887,847	100.0	100.0
Utah	40	100.0	480,811	100.0	100.0
Vermont	245	74.7	101,413	100.0	90.4
Virginia	132	85.2	1,110,815	100.0	98.9
Washington	296	97.0	991,235	100.0	98.3
West Virginia	55	100.0	300,737	100.0	100.0
Wisconsin	426	99.1	881,552	100.0	99.7
Wyoming	48	100.0	96,504	100.0	100.0

NOTE: Regular school districts exclude non-operating and special districts. The percent of school districts is calculated by dividing the number of regular districts by the total number of districts in the F-33 files shown in table 1-1. The percent of students is calculated by dividing the number of students in regular districts by the total number of students in the F-33 file; the percent of revenues is calculated by dividing the revenues in regular districts by the revenues of all districts in the F-33 file.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

Table 1-3. Total number of regular school districts and percentages based on all school districts, by type of school district and state: 1997–98

State	Elementary school districts		Secondary school districts		Unified school districts		All school districts	
	Number of districts	Percent of districts	Number of districts	Percent of districts	Number of districts	Percent of districts	Number of districts	Percent of districts
United States	3,175	22.3	508	3.6	10,571	74.2	14,254	100.0
Alabama	0	0.0	0	0.0	127	100.0	127	100.0
Alaska	0	0.0	0	0.0	53	100.0	53	100.0
Arizona	106	49.3	17	7.9	92	42.8	215	100.0
Arkansas	0	0.0	0	0.0	310	100.0	310	100.0
California	582	58.9	93	9.4	313	31.7	988	100.0
Colorado	1	0.6	0	0.0	175	99.4	176	100.0
Connecticut	45	27.1	8	4.8	113	68.1	166	100.0
Delaware	0	0.0	1	6.3	15	93.8	16	100.0
District of Columbia	0	0.0	0	0.0	1	100.0	1	100.0
Florida	0	0.0	0	0.0	67	100.0	67	100.0
Georgia	7	3.9	0	0.0	173	96.1	180	100.0
Hawaii	0	0.0	0	0.0	1	100.0	1	100.0
Idaho	6	5.4	0	0.0	106	94.6	112	100.0
Illinois	387	43.2	104	11.6	405	45.2	896	100.0
Indiana	1	0.3	0	0.0	291	99.7	292	100.0
Iowa	24	6.4	0	0.0	353	93.6	377	100.0
Kansas	2	0.7	0	0.0	302	99.3	304	100.0
Kentucky	6	3.4	0	0.0	170	96.6	176	100.0
Louisiana	0	0.0	0	0.0	66	100.0	66	100.0
Maine	111	48.9	5	2.2	111	48.9	227	100.0
Maryland	0	0.0	0	0.0	24	100.0	24	100.0
Massachusetts	73	24.5	17	5.7	208	69.8	298	100.0
Michigan	104	15.9	20	3.0	532	81.1	656	100.0
Minnesota	19	5.5	4	1.1	325	93.4	348	100.0
Mississippi	0	0.0	0	0.0	149	100.0	149	100.0
Missouri	74	14.2	0	0.0	448	85.8	522	100.0
Montana	293	64.1	117	25.6	47	10.3	457	100.0
Nebraska	336	54.0	20	3.2	266	42.8	622	100.0
Nevada	1	5.9	0	0.0	16	94.1	17	100.0
New Hampshire	88	54.0	7	4.3	68	41.7	163	100.0
New Jersey	297	53.8	48	8.7	207	37.5	552	100.0
New Mexico	1	1.1	0	0.0	88	98.9	89	100.0
New York	44	6.4	3	0.4	640	93.2	687	100.0
North Carolina	0	0.0	0	0.0	117	100.0	117	100.0
North Dakota	49	21.2	6	2.6	176	76.2	231	100.0
Ohio	1	0.2	0	0.0	610	99.8	611	100.0
Oklahoma	117	21.4	0	0.0	431	78.6	548	100.0
Oregon	20	10.1	2	1.0	176	88.9	198	100.0
Pennsylvania	2	0.4	0	0.0	498	99.6	500	100.0
Rhode Island	4	11.1	0	0.0	32	88.9	36	100.0
South Carolina	0	0.0	0	0.0	86	100.0	86	100.0
South Dakota	7	4.0	0	0.0	166	96.0	173	100.0
Tennessee	17	12.4	0	0.0	120	87.6	137	100.0
Texas	68	6.5	0	0.0	973	93.5	1,041	100.0
Utah	0	0.0	0	0.0	40	100.0	40	100.0
Vermont	184	75.1	25	10.2	36	14.7	245	100.0
Virginia	1	0.8	0	0.0	131	99.2	132	100.0
Washington	48	16.2	0	0.0	248	83.8	296	100.0
West Virginia	0	0.0	0	0.0	55	100.0	55	100.0
Wisconsin	47	11.0	11	2.6	368	86.4	426	100.0
Wyoming	2	4.2	0	0.0	46	95.8	48	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

Table 1-4. Total number of students in regular school districts and percentages based on all school districts, by type of school district and state: 1997–98

State	Elementary school districts		Secondary school districts		Unified school districts		All school districts	
	Number of students	Percent of students	Number of students	Percent of students	Number of students	Percent of students	Number of students	Percent of students
United States	2,652,821	5.8	986,784	2.2	41,997,530	92.0	45,637,135	100.0
Alabama	0	0.0	0	0.0	739,321	100.0	739,321	100.0
Alaska	0	0.0	0	0.0	130,633	100.0	130,633	100.0
Arizona	226,702	28.5	72,056	9.1	495,567	62.4	794,325	100.0
Arkansas	0	0.0	0	0.0	453,779	100.0	453,779	100.0
California	1,192,471	21.1	482,632	8.5	3,988,941	70.4	5,664,044	100.0
Colorado	45	0.0	0	0.0	686,315	100.0	686,360	100.0
Connecticut	24,371	4.7	7,703	1.5	483,067	93.8	515,141	100.0
Delaware	0	0.0	754	0.7	104,943	99.3	105,697	100.0
District of Columbia	0	0.0	0	0.0	77,111	100.0	77,111	100.0
Florida	0	0.0	0	0.0	2,292,161	100.0	2,292,161	100.0
Georgia	2,740	0.2	0	0.0	1,373,240	99.8	1,375,980	100.0
Hawaii	0	0.0	0	0.0	189,887	100.0	189,887	100.0
Idaho	165	0.1	0	0.0	244,238	99.9	244,403	100.0
Illinois	502,531	25.5	214,521	10.9	1,254,653	63.6	1,971,705	100.0
Indiana	240	0.0	0	0.0	985,450	100.0	985,690	100.0
Iowa	4,629	0.9	0	0.0	496,425	99.1	501,054	100.0
Kansas	252	0.1	0	0.0	468,728	99.9	468,980	100.0
Kentucky	7,975	1.2	0	0.0	637,257	98.8	645,232	100.0
Louisiana	0	0.0	0	0.0	774,561	100.0	774,561	100.0
Maine	26,211	12.4	2,373	1.1	183,454	86.5	212,038	100.0
Maryland	0	0.0	0	0.0	830,744	100.0	830,744	100.0
Massachusetts	43,302	4.7	21,042	2.3	848,156	92.9	912,500	100.0
Michigan	18,673	1.1	1,755	0.1	1,659,364	98.8	1,679,792	100.0
Minnesota	4,498	0.5	1,119	0.1	836,106	99.3	841,723	100.0
Mississippi	0	0.0	0	0.0	503,635	100.0	503,635	100.0
Missouri	12,710	1.4	0	0.0	888,958	98.6	901,668	100.0
Montana	99,696	61.5	44,908	27.7	17,560	10.8	162,164	100.0
Nebraska	10,709	3.7	4,449	1.5	276,412	94.8	291,570	100.0
Nevada	114	0.0	0	0.0	296,507	100.0	296,621	100.0
New Hampshire	37,856	19.2	4,844	2.5	154,034	78.3	196,734	100.0
New Jersey	246,265	20.3	79,809	6.6	889,893	73.2	1,215,967	100.0
New Mexico	8,931	2.7	0	0.0	322,742	97.3	331,673	100.0
New York	30,201	1.1	15,636	0.6	2,788,245	98.4	2,834,082	100.0
North Carolina	0	0.0	0	0.0	1,230,010	100.0	1,230,010	100.0
North Dakota	2,898	2.5	672	0.6	113,243	96.9	116,813	100.0
Ohio	8	0.0	0	0.0	1,846,577	100.0	1,846,585	100.0
Oklahoma	22,166	3.6	0	0.0	601,515	96.4	623,681	100.0
Oregon	5,235	1.0	919	0.2	534,072	98.9	540,226	100.0
Pennsylvania	895	0.0	0	0.0	1,790,205	100.0	1,791,100	100.0
Rhode Island	2,300	1.5	0	0.0	150,056	98.5	152,356	100.0
South Carolina	0	0.0	0	0.0	648,084	100.0	648,084	100.0
South Dakota	1,304	1.0	0	0.0	132,394	99.0	133,698	100.0
Tennessee	25,242	2.9	0	0.0	851,451	97.1	876,693	100.0
Texas	11,650	0.3	0	0.0	3,876,197	99.7	3,887,847	100.0
Utah	0	0.0	0	0.0	480,811	100.0	480,811	100.0
Vermont	45,717	45.1	20,937	20.6	34,759	34.3	101,413	100.0
Virginia	446	0.0	0	0.0	1,110,369	100.0	1,110,815	100.0
Washington	10,061	1.0	0	0.0	981,174	99.0	991,235	100.0
West Virginia	0	0.0	0	0.0	300,737	100.0	300,737	100.0
Wisconsin	23,019	2.6	10,655	1.2	847,878	96.2	881,552	100.0
Wyoming	593	0.6	0	0.0	95,911	99.4	96,504	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

Table 1-5. Total number of school districts and students for regular school districts with Geographic Cost of Education Index (GCEI) and percentages based on all school districts, by state: 1997–98

State	Number of school districts	Percent of school districts	Number of students	Percent of students	Percent of expenditures
United States	14,077	91.0	45,496,799	99.0	96.8
Alabama	127	100.0	739,321	100.0	100.0
Alaska	53	100.0	130,633	100.0	100.0
Arizona	214	93.0	794,221	100.0	99.2
Arkansas	310	95.1	453,779	99.4	97.4
California	975	90.5	5,631,188	98.3	93.1
Colorado	176	90.3	686,360	100.0	99.0
Connecticut	166	95.4	515,141	100.0	99.9
Delaware	16	84.2	105,697	94.9	91.4
District of Columbia	1	100.0	77,111	100.0	100.0
Florida	67	100.0	2,292,161	100.0	100.0
Georgia	180	91.8	1,375,980	100.0	99.4
Hawaii	1	100.0	189,887	100.0	100.0
Idaho	112	100.0	244,403	100.0	100.0
Illinois	891	85.2	1,966,656	99.7	97.2
Indiana	292	92.7	985,690	100.0	98.7
Iowa	377	96.2	501,054	100.0	93.7
Kansas	304	100.0	468,980	100.0	100.0
Kentucky	176	100.0	645,232	100.0	100.0
Louisiana	66	100.0	774,561	100.0	100.0
Maine	224	76.7	211,613	99.8	98.1
Maryland	24	100.0	830,744	100.0	100.0
Massachusetts	295	75.3	909,978	96.6	95.3
Michigan	552	76.8	1,655,333	98.5	90.7
Minnesota	327	78.6	820,211	97.4	94.3
Mississippi	149	98.0	503,635	99.8	99.8
Missouri	522	99.4	901,668	99.1	96.9
Montana	456	94.4	162,040	99.9	98.9
Nebraska	618	94.1	289,873	99.4	95.9
Nevada	17	100.0	296,621	100.0	100.0
New Hampshire	162	91.5	194,270	98.7	97.5
New Jersey	550	89.4	1,213,634	98.0	94.7
New Mexico	88	98.9	322,742	97.3	97.2
New York	679	98.4	2,820,089	99.5	99.5
North Carolina	117	100.0	1,230,010	100.0	100.0
North Dakota	229	88.1	116,339	99.6	92.9
Ohio	611	84.0	1,846,585	100.0	93.3
Oklahoma	547	93.3	623,174	99.9	92.1
Oregon	194	88.2	520,290	96.3	91.1
Pennsylvania	500	82.6	1,791,100	100.0	90.6
Rhode Island	36	100.0	152,356	100.0	100.0
South Carolina	86	87.8	648,084	100.0	99.5
South Dakota	173	98.3	133,698	100.0	99.9
Tennessee	137	99.3	876,693	100.0	100.0
Texas	1,041	97.9	3,887,847	100.0	100.0
Utah	40	100.0	480,811	100.0	100.0
Vermont	243	74.1	99,216	97.8	88.3
Virginia	132	85.2	1,110,815	100.0	98.9
Washington	296	97.0	991,235	100.0	98.3
West Virginia	55	100.0	300,737	100.0	100.0
Wisconsin	425	98.8	880,799	99.9	99.6
Wyoming	48	100.0	96,504	100.0	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

districts and students that are included in the database used in analyses of "cost-adjusted" expenditures for each state.)

State Analyses

The state analyses presented in the report generally follow the national model, but focus more on two issues. One is the amount of variation in expenditures per pupil across school districts within each state. The second is the relationship between expenditures per pupil and selected district demographic and fiscal characteristics.

Several factors motivated the selection of these analyses for the report. The amount of interdistrict variation in expenditure per pupil was selected because the literature on school finance equity uses interdistrict variation in expenditure per pupil as a measure of the equity of a state's school finance system (Berne and Stiefel 1984). This analysis was designed to determine whether states uniformly have a similar level of interdistrict variation in school expenditures or whether the level of variation differs across the states. The analyses compare variations within states to a national measure of variation. The figures are also compared on a state-by-state basis. The analysis does not, however, compare within-state variation to between-state variation.

Of particular interest was whether there are regional differences in interdistrict variation in expenditures per pupil. Regional differences are important because different regions of the country have different political cultures, which often affect the way schools are governed and financed. New England states, for example, have historically organized school districts around cities and towns, which then play a major role in the financing of education. Southern states, in contrast, have organized school districts around larger county units, with state governments playing a larger role in education policy and finance (Kirst 1970).

The second set of analyses, analyses of the relationship between school district fiscal capacity and expenditures for education, was included because this relationship is also an important equity measure in school finance research (Berne and Stiefel 1984). This study attempted to assess whether the relationship between school district wealth and education expenditures still exists nationally and in the 50 states.

In addition, research has shown that school districts with a higher concentration of poor or minority children generally have greater educational needs that require additional resources for education (Parrish, Hikido, and Fowler 1998). This study attempted to ascertain whether, in fact, school districts with larger poor or minority school populations were actually spending more money for education than school districts with lower concentrations of children from poor or minority backgrounds.

Interdistrict Variation in Expenditures Per Pupil

The equity framework developed by Berne and Stiefel (1984) contained several measures of interdistrict variation in revenues. This analysis used three measures from that framework—the restricted range ratio, the coefficient of variation, and the Gini coefficient—and a synthesized measure of variation that integrates the three measures.

- The **restricted range ratio** calculates the difference in expenditures per pupil between the district at the 95th percentile of spending and the district at the 5th percentile of spending and divides that difference by expenditures per pupil of the district at the 5th percentile. This measure demonstrates how many times greater the resources are at the high end of the distribution than at the low end, while excluding outliers from the analysis.[3]

- The **coefficient of variation** is calculated as the standard deviation of adjusted spending per pupil divided by the mean multiplied by 100. The coefficient of variation does not exclude outliers and indicates roughly the percentage above and below the mean within which two-thirds of the observations lie. This helps to identify the spread of spending levels.

- The **Gini coefficient** is based on a curve showing the cumulative proportion of total revenues against the cumulative proportion of students. If every school district had the same expenditures per pupil, this curve would be a straight line with a positive 45-degree slope. The Gini coefficient, which ranges from 0 to 1, is a measure of the difference between the ideal straight line and the curve plotted by the data. A value of 0 indicates no variation, while a value of 1 indicates maximum variation among the districts.

- The **synthesized measure of variation** was created by ranking the states on each of the above three measures and averaging the three ranks for each state. States were then divided into quartiles based on their ranking on the synthesized measure; states with the lowest quartile ranking had the least variation in expenditures per pupil, while those with the highest ranking had the greatest variation.

The analyses of interdistrict variation in expenditures per pupil using the coefficient of variation and the Gini coefficient are ***weighted*** analyses. Each district's value on the measure of expenditures per pupil is weighted by the number of students enrolled in fall 1997. The analyses include 49 states. The District of Columbia and Hawaii were not included in state-level analyses since they each only contain one school district. As noted previously, states tend to vary in the structure of school districts with some states having mostly unified districts and others having a combination of elementary, secondary, and unified districts. A state's district structure could affect its measures of interdistrict variation in expenditures per pupil since per pupil funding in secondary districts is greater than in elementary or unified districts (Parrish, Hikido, and Fowler 1998).

The range of variation was different depending on which type of expenditure was being investigated. Therefore, rather than defining a standard level of "high variation" or "low variation" for use across all expenditure types, states were compared with each other within each variation measure. States considered "high variation" states are simply those states with the highest variation; similarly, states referred to as "low variation" states are those states with the lowest variation.

Regional analyses of interdistrict variation in expenditures per pupil used the quartile ranking of the synthesized measure of variation. Within each region states were classified in either the top two quartiles (states with low variation) or the bottom two quartiles (states with high variation).

[3]The term "restricted range ratio" is used interchangeably with the term "Federal range ratio" in school finance analyses, although Berne and Stiefel use the term Federal range ratio in their framework. The national statistics were calculated based on data for all school districts in the country, not as the average of state figures. The upper bound for reporting the ratio for states was set at 200, since this level included almost all states whose ratios were less than infinity.

Analyses of interdistrict variation in expenditures per pupil were conducted using both unadjusted and cost-adjusted revenues. The number of school districts and students included in the unadjusted analyses is found in table 1-2; the number of districts and students in the cost-adjusted analyses is found in table 1-5.

Relationship Between Expenditures Per Pupil and Selected District Fiscal and Demographic Characteristics

The final component of the state analyses was an examination of the relationship between expenditures per pupil and the following district demographic and fiscal characteristics: percent minority enrollment, district poverty rate, median household income, and median housing value. These analyses used simple correlation coefficients as the basis for determining whether school district expenditures per pupil in each state were related to these school district characteristics.

Using their strength and direction, these relationships were characterized as:

- **Strong positive**: +0.50 to +1.00; **Moderate positive**: +0.11 to +0.49; **Weak positive**: +0.01 to +0.10;
- **Weak negative**: -0.01 to -0.10; **Moderate negative**: -0.11 to -0.49; **Strong negative**: -0.50 to -1.00.

Relationships were characterized as strong positive if the correlation was between +0.50 and +1.00, moderate positive if the correlation was between +0.11 and +0.49, weak positive if the correlation was between +0.01 and +0.10, weak negative if the correlation was between -0.10 and -0.01, moderate negative if the correlation was between -0.11 and -0.49, and strong negative if the correlation was between -0.50 and -1.00. The analysis used two-tailed t-tests comparing each correlation to zero as a way to determine which correlations were significant. For a correlation to be reported, the relationship had to be significantly different from zero at the 0.05 level. When doing these significance tests it is assumed that the data come from a simple random sample without replacement.

All the analyses of correlation between expenditures per pupil and district fiscal and demographic characteristics are ***weighted*** analyses. Again, each district's weight in the analyses is the number of students enrolled in fall 1997.

Although included in national analyses, the presence of a single school district in the District of Columbia and Hawaii precluded them from state-level variance and correlation analyses. In addition to the District of Columbia and Hawaii, nine states were excluded from the correlation analyses because more than 50 percent of the school districts were missing the required demographic and fiscal data. These states are Arkansas, Colorado, Georgia, Kentucky, Mississippi, New Jersey, New Mexico, Oklahoma, and South Dakota.

Finally, correlation analyses were conducted using both unadjusted and cost-adjusted expenditures. Table 1-6 presents the number and percentage of districts and students in the correlation analysis based on unadjusted expenditures nationally and for each state, as well as the percentage of total expenditures remaining from the original file; table 1-7 presents this information for the analysis based on cost-adjusted expenditures. National correlation analyses included about 78 percent of the school districts in the original F-33 file and between 94 and 95 percent of the students in the original file.

Table 1-6. Total number of school districts and students for regular school districts with Census Mapping Data and percentages based on all school districts, by state: 1997–98

State	Number of school districts	Percent of school districts	Number of students	Percent of students	Percent of expenditures
United States	12,157	78.0	43,260,940	95.0	92.1
Alabama	127	100.0	739,321	100.0	100.0
Alaska	53	100.0	130,633	100.0	100.0
Arizona	211	91.7	790,784	99.6	98.7
Arkansas	116	35.6	321,196	70.4	69.7
California	952	88.4	5,547,426	96.9	91.6
Colorado	57	29.2	603,604	87.9	86.5
Connecticut	166	95.4	515,141	100.0	99.9
Delaware	16	84.2	105,697	94.9	91.4
District of Columbia	1	100.0	77,111	100.0	100.0
Florida	67	100.0	2,292,161	100.0	100.0
Georgia	66	33.7	1,039,075	75.5	76.6
Hawaii	1	100.0	189,887	100.0	100.0
Idaho	110	98.2	243,209	99.5	99.4
Illinois	882	84.3	1,956,864	99.2	96.7
Indiana	292	92.7	985,690	100.0	98.7
Iowa	366	93.4	492,080	98.2	92.0
Kansas	304	100.0	468,980	100.0	100.0
Kentucky	86	48.9	494,553	76.6	77.0
Louisiana	66	100.0	774,561	100.0	100.0
Maine	222	76.0	211,536	99.8	98.0
Maryland	24	100.0	830,744	100.0	100.0
Massachusetts	296	75.5	911,858	96.8	95.5
Michigan	553	76.9	1,659,550	98.7	90.9
Minnesota	297	71.4	785,222	93.3	90.3
Mississippi	68	44.7	332,183	65.8	67.1
Missouri	352	67.0	609,277	67.0	64.6
Montana	449	93.0	161,518	99.6	98.5
Nebraska	611	93.0	287,215	98.5	94.9
Nevada	17	100.0	296,621	100.0	100.0
New Hampshire	158	89.3	191,246	97.2	95.6
New Jersey	142	23.1	689,987	55.7	54.5
New Mexico	41	46.1	286,067	86.2	84.2
New York	674	97.7	2,812,718	99.2	99.1
North Carolina	116	99.1	1,214,492	98.7	98.7
North Dakota	225	86.5	114,891	98.4	91.6
Ohio	611	84.0	1,846,585	100.0	93.3
Oklahoma	63	10.8	321,252	51.5	47.7
Oregon	190	86.4	516,606	95.6	90.5
Pennsylvania	500	82.6	1,791,100	100.0	90.6
Rhode Island	35	97.2	148,385	97.4	97.1
South Carolina	86	87.8	648,084	100.0	99.5
South Dakota	81	46.0	105,792	79.1	78.8
Tennessee	135	97.8	875,401	99.9	99.8
Texas	1,041	97.9	3,887,847	100.0	100.0
Utah	40	100.0	480,811	100.0	100.0
Vermont	237	72.3	96,381	95.0	86.2
Virginia	132	85.2	1,110,815	100.0	98.9
Washington	295	96.7	991,226	100.0	98.3
West Virginia	55	100.0	300,737	100.0	100.0
Wisconsin	424	98.6	880,316	99.9	99.5
Wyoming	48	100.0	96,504	100.0	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

Table 1-7. Total number of school districts and students for regular school districts with Geographic Cost of Education Index (GCEI) and Census Mapping Data and percentages based on all school districts, by state: 1997–98

State	Number of school districts	Percent of school districts	Number of students	Percent of students	Percent of expenditures
United States	12,155	78.0	43,254,843	94.0	92.1
Alabama	127	100.0	739,321	100.0	100.0
Alaska	53	100.0	130,633	100.0	100.0
Arizona	211	91.7	790,784	99.6	98.7
Arkansas	116	35.6	321,196	70.4	69.7
California	952	88.4	5,547,426	96.9	91.6
Colorado	57	29.2	603,604	87.9	86.5
Connecticut	166	95.4	515,141	100.0	99.9
Delaware	16	84.2	105,697	94.9	91.4
District of Columbia	1	100.0	77,111	100.0	100.0
Florida	67	100.0	2,292,161	100.0	100.0
Georgia	66	33.7	1,039,075	75.5	76.6
Hawaii	1	100.0	189,887	100.0	100.0
Idaho	110	98.2	243,209	99.5	99.4
Illinois	882	84.3	1,956,864	99.2	96.7
Indiana	292	92.7	985,690	100.0	98.7
Iowa	366	93.4	492,080	98.2	92.0
Kansas	304	100.0	468,980	100.0	100.0
Kentucky	86	48.9	494,553	76.6	77.0
Louisiana	66	100.0	774,561	100.0	100.0
Maine	222	76.0	211,536	99.8	98.0
Maryland	24	100.0	830,744	100.0	100.0
Massachusetts	295	75.3	909,978	96.6	95.3
Michigan	552	76.8	1,655,333	98.5	90.7
Minnesota	297	71.4	785,222	93.3	90.3
Mississippi	68	44.7	332,183	65.8	67.1
Missouri	352	67.0	609,277	67.0	64.6
Montana	449	93.0	161,518	99.6	98.5
Nebraska	611	93.0	287,215	98.5	94.9
Nevada	17	100.0	296,621	100.0	100.0
New Hampshire	158	89.3	191,246	97.2	95.6
New Jersey	142	23.1	689,987	55.7	54.5
New Mexico	41	46.1	286,067	86.2	84.2
New York	674	97.7	2,812,718	99.2	99.1
North Carolina	116	99.1	1,214,492	98.7	98.7
North Dakota	225	86.5	114,891	98.4	91.6
Ohio	611	84.0	1,846,585	100.0	93.3
Oklahoma	63	10.8	321,252	51.5	47.7
Oregon	190	86.4	516,606	95.6	90.5
Pennsylvania	500	82.6	1,791,100	100.0	90.6
Rhode Island	35	97.2	148,385	97.4	97.1
South Carolina	86	87.8	648,084	100.0	99.5
South Dakota	81	46.0	105,792	79.1	78.8
Tennessee	135	97.8	875,401	99.9	99.8
Texas	1,041	97.9	3,887,847	100.0	100.0
Utah	40	100.0	480,811	100.0	100.0
Vermont	237	72.3	96,381	95.0	86.2
Virginia	132	85.2	1,110,815	100.0	98.9
Washington	295	96.7	991,226	100.0	98.3
West Virginia	55	100.0	300,737	100.0	100.0
Wisconsin	424	98.6	880,316	99.9	99.5
Wyoming	48	100.0	96,504	100.0	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

The computation of correlations in the report was based on a weighted Pearson product-moment correlation. The computations were implemented by using Proc Corr in SAS. The formula for a weighted Pearson product-moment correlation is:

$$r_{xy} = \frac{\Sigma w_i (x_i - \bar{x}_w)(y_i - \bar{y}_w)}{\sqrt{\Sigma\, w_i (x_i - \bar{x}_w)^2 \, \Sigma w_i (y_i - \bar{y}_w)^2}}$$

Where

w_i = the number of students in the district

x_i = the district's value on the demographic characteristics (e.g., percent minority enrollment) or the fiscal characteristic (e.g., median housing value)

$\bar{x}_w$ = the weighted mean on the demographic or fiscal characteristic

y_i = the district's value on the revenue measure (e.g., local revenues per pupil)

$\bar{y}_w$ = the weighted mean or the revenue measure

Definitions

Several expenditure measures were used in the analyses described above. These include total expenditures, current expenditures, salary expenditures, salary and fringe benefit expenditures, and expenditures for the following functions: instruction; student and instructional staff support services; administration; and plant maintenance and operations. All expenditures include both district expenditures and state expenditures for, and on behalf of, districts for student transportation, textbooks, retirement contributions, and other fringe benefits. State expenditures have been allocated to each of the functions and objects for analysis, so each function and object includes all expenditures from both district and state funds.

It should be noted that the expenditures from the F-33 used in this report do not always correspond exactly with state expenditures data generated by the "National Public Education Financial Survey" (NPEFS), which the NCES also administers each year. These differences may be due to the fact that the NPEFS includes direct state expenditures for state schools, expenditures for intermediate and special districts, transportation for special education students in state schools, and, in some states, capital construction. Readers interested in state-level expenditures for education should use data from the NPEFS, rather than local expenditure data from the F-33.

The specific expenditure measures used in the analyses are defined below.

- **Total expenditures** include current expenditures (defined above), nonelementary/secondary programs, and capital expenditures. Capital expenditures include expenditures for construction of fixed assets and for purchasing land, existing buildings and grounds and equipment. Nonelementary/secondary programs include community services and adult education.

- **Current expenditures** include salaries and wages, employee benefits, purchased services, supplies, and other miscellaneous expenditures in the following categories: elementary/secondary educational instructional programs in prekindergarten through grade 12 and elementary/secondary noninstructional programs. Instructional programs include instruction and support services. Noninstructional programs include food services, enterprise operations, and other noninstructional activities.

- **Administration expenditures** include general and school administration, as well as business support and central support services. General administration includes expenditures for the board of education and executive administration services (office of the superintendent). School administration includes expenditures for the office of the principal. Business support services include expenditures for fiscal services, purchasing, warehousing, supply distribution, printing, publishing, and duplicating services. Central support services include expenditure for planning, research and development, evaluation, information, and management services.

- **Employee benefit expenditures** include employee benefits paid for by the local education agency. These include the employer share of state or local employment retirement contributions, social security contributions, group life and health insurance, unemployment and workmen's compensation, and any tuition reimbursements.

- **Instructional expenditures** include current operating expenditures for activities directly related to classroom instruction or instruction in other settings, as well as cocurricular activities.

- **Instructional staff support services expenditures** include supervision of instructional services; instructional staff training; and media, library, audiovisual, television, and computer-assisted instruction services.

- **Plant maintenance and operations services expenditures** include building services (heating, electricity, air conditioning, property insurance), care and upkeep of grounds and equipment, nonstudent transportation vehicle operation and maintenance, and security services.

- **Pupil support expenditures** include guidance, health, and logistical support that enhance instruction. Such support includes attendance, social work, student accounting, counseling, student appraisal, student records maintenance, and placement services. Pupil support services also include medical, dental, nursing, psychological, and speech services.

- **Salaries expenditures** include salaries and wages paid by the local education agency for education staff employed by the agency.

Several of the analyses in the report stratify states on different characteristics, including region. The grouping of states into regions was based on the classification used by the U.S. Bureau of the Census. It should be recognized that regional averages often mask differences among states and school districts with the region. However, since "region" is generally recognized as a standard stratification of states in many statistical reports, it was used in this report as well to present differences in expenditures in different parts of the country. The regional categories are provided below.

- **Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

- **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
- **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.
- **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

The analyses of relationships between school district characteristics and different types of expenditure include two measures of district wealth (median household income and median housing value) and two demographic measures (minority enrollment and district poverty rate)—all from the 1990 Census. These measures have the following definitions:

- **Median household income** is the median income of the householder and all other persons 15 years old and over in the household, whether related to the householder or not, in calendar year 1989.
- **Median housing value** is the median value of specified owner-occupied housing units in a state in 1990.[4]
- **Minority enrollment** is the percentage of students enrolled in 1990 who were African American, Hispanic, Asian, American Indian, and Alaska Native.
- **District poverty rate** is the percentage of school-age children living in households with income at or below the poverty level in 1989.

It should be recognized that the correlations presented in the report are based on bivariate statistics that do not reflect the influence of other factors on school district expenditures. The influence of other factors would need to be examined through multivariate analyses, which were beyond the scope of this report.

Organization of the Report

The balance of the report is organized into four chapters. Chapter 2 presents an analysis of total expenditures, including current and capital expenditures. Chapter 3 examines current expenditures, including expenditures for salaries and employee benefits. Chapter 4 examines expenditures for four education functions: instruction, student and instructional staff support services, administration, and plant maintenance and operations services. Chapter 5 presents a synthesis and summary of the report's major findings. Appendices to the report contain technical notes and detailed correlation tables on district expenditures. Finally, the glossary provides definitions of key terms in the report.

[4]State finance formulas generally use a measure of property valuation per pupil that is equalized to some percentage of full market value to distribute state aid to school districts. This measure includes commercialized industrial property, in addition to residential property. However, a standardized measure of property valuation is not available for all states. Median housing value was therefore used as a proxy for the taxable property value of a community.

Chapter 2:Total Expenditures

Total Expenditures

School district expenditures for public elementary and secondary education totaled $326.8 billion in 1997–98 before cost adjustments (table 2-1). Over 84 percent of these expenditures ($274.9 billion) were used for instruction, support services, and other elementary and secondary programs. The remaining 16 percent ($51.9 billion) were spent on other functions including nonelementary or nonsecondary programs, capital outlay, expenditure by a local education agency, and debt service expenditures (NCES 1998). Expenditures by a local education agency (LEA) include district support services provided by the LEA and administrative expenditures of the LEA; debt service expenditures include interest on debt.

Total Expenditures Per Pupil

Total school district expenditures per pupil in the United States averaged $7,161 in 1997–98 before cost adjustments (table 2-1). Total school district expenditures per pupil were highest in the Northeast ($9,547) and lowest in the West ($6,382). (See Glossary to identify states associated with different geographic regions.) Expenditures per pupil in the highest region were 1.5 times greater than those in the lowest region before cost adjustments and 1.4 times greater after adjustments. Further, the difference between these two regions decreased from $3,165 to $2,541 after cost adjustments. The Northeast ($8,618) remained the highest-expenditure region after adjustments, and the West ($6,077) remained the region with the lowest total expenditures per pupil.

The smallest school districts had greater total expenditures per pupil, both before and after cost adjustments. Before cost adjustments, total expenditures per pupil averaged $7,539 in districts with fewer than 1,000 students, compared to $6,984 in districts with 10,000 or more students. After cost adjustments, smaller districts continued to have higher average total expenditures per pupil than larger districts. In addition, the difference between the smallest and the largest districts increased from $555 to $1,626 per pupil. Nationally, however, there was a weak relationship between a district's enrollment and total expenditures per pupil, both before and after cost adjustments (tables A-1 and A-2).

Before cost adjustments, total expenditures per pupil showed moderate, statistically significant relationships with two measures of district wealth—median household income (+0.29) and median housing value (+0.28) (table A-3). School districts with median household income at or above $35,000 had average total expenditures per pupil of $7,752, while districts with median household incomes below $20,000 had expenditures per pupil of $6,569. Similarly, districts with median housing values at or above $85,000 had average total expenditures of $7,861 per pupil, while districts with median housing values below $40,000 had expenditures per pupil of $6,861.

Table 2-1. Total expenditures, cost-adjusted total expenditures, total expenditures per pupil, and cost-adjusted total expenditures per pupil in public school districts, by region, district enrollment, minority enrollment, district poverty rate, median household income, and median housing value: 1997–98

School district characteristics	Total expenditures (in thousands)	Cost-adjusted total expenditures (in thousands)	Total expenditures per pupil	Cost-adjusted total expenditures per pupil
All districts	$326,815,392	$324,736,669	$7,161	$7,138
Region				
Northeast	75,722,755	68,148,249	9,547	8,618
Midwest	77,793,405	79,426,174	7,325	7,517
South	105,595,656	113,065,745	6,409	6,863
West	67,703,576	64,096,501	6,382	6,077
District enrollment				
0–999	20,494,436	22,562,078	7,539	8,420
1,000–4,999	95,139,923	96,575,362	7,326	7,470
5,000–9,999	51,420,976	50,373,434	7,288	7,155
10,000 or more	159,760,057	155,225,795	6,984	6,794
Minority enrollment				
Less than 5 percent	81,821,266	84,309,692	7,245	7,469
5 percent–<20 percent	85,692,631	85,094,874	7,141	7,091
20 percent–<50 percent	88,039,880	87,770,464	6,858	6,837
50 percent or more	54,249,622	50,905,881	7,609	7,140
Data missing[1]	17,011,993	16,655,759	—	—
District poverty rate				
Less than 5 percent	43,787,374	40,389,585	8,467	7,819
5 percent–<15 percent	108,680,026	108,168,942	7,019	6,986
15 percent–<25 percent	79,222,774	82,316,655	6,685	6,946
25 percent or more	78,113,225	77,205,729	7,263	7,179
Data missing[1]	17,011,993	16,655,759	—	—
Median household income				
Less than $20,000	22,735,095	24,997,190	6,569	7,223
$20,000–<$25,000	56,228,796	60,038,602	6,696	7,150
$25,000–<$30,000	80,918,635	81,047,541	7,219	7,231
$30,000–<$35,000	51,997,427	51,318,922	6,876	6,786
$35,000 or more	97,923,446	90,678,655	7,752	7,182
Data missing[1]	17,011,993	16,655,759	—	—
Median housing value				
Less than $40,000	25,103,137	27,909,001	6,861	7,628
$40,000–<$55,000	51,686,038	55,768,614	6,602	7,124
$55,000–<$85,000	96,818,427	99,726,762	6,701	6,904
$85,000 or more	136,195,797	124,676,533	7,861	7,197
Data missing[1]	17,011,993	16,655,759	—	—

—Not available.
[1]These districts were missing 1990 Census demographic data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

After cost adjustments, total adjusted expenditures per pupil were higher in districts with the lowest median household incomes ($7,223 per pupil) than in districts with the highest incomes ($7,182), and were highest in districts with median household income between $25,000 and $30,000 ($7,231). Total expenditures per pupil were also higher in districts with the lowest median housing value ($7,628) than in districts with the highest housing values ($7,197). In correlation analysis, the relationship with median household income was weak, and the relationship with median housing value was not statistically significant (table A-4).

Before adjustments, school districts with the highest minority enrollments had higher total expenditures per pupil than districts with the lowest minority enrollments, $7,609 and $7,245, respectively. Districts with between 20 and 50 percent enrollment had the lowest expenditures per pupil at $6,858. After adjustments, the figures were reversed—$7,469 in the lowest-minority districts and $7,140 in the

highest-minority districts, while mid-level minority districts remained lowest in average expenditures per pupil. However, total expenditures per pupil showed very little relationship with district demographic characteristics such as minority enrollment and poverty rate—both before and after cost adjustments (tables A-3 and A-4).

Total expenditures per pupil, in contrast, were higher in the lowest-poverty districts than in the highest-poverty districts both before and after cost adjustments—$8,467 and $7,263, respectively, before cost adjustments, and $7,819 and $7,179 respectively, after cost adjustments.

Variations in Total Expenditures Per Pupil

Restricted Range Ratio

The restricted range ratio for unadjusted total expenditures per pupil across the United States was 1.16 (table 2-2). This means expenditures in the district at the 95th percentile were 1.16 times higher than expenditures in the district at the 5th percentile. Variation across the states ranged from a low of 0.21 in Nevada to a high of 1.47 in Vermont. Two states (Illinois and Vermont) had a restricted range ratio higher than that for the United States.

When cost adjustments were applied, the restricted range ratio for total expenditures per pupil across the United States fell to 1.00 (table 2-3). Four states (Alaska, Illinois, Montana, and Vermont) exceeded the national variation after cost adjustments. The range between the lowest-variation and highest-variation states remained the same. After cost adjustments, the restricted range ratio ranged from 0.25 in Nevada to 1.50 in Vermont.

Coefficient of Variation

The coefficient of variation for unadjusted total expenditures per pupil across the United States was 0.27. This means approximately two-thirds of the districts nationally have total expenditures per pupil between $5,228 and $9,094, a range that is from 27 percent below the mean to 27 percent above the mean. Variation across the states ranged from a low of 0.09 in Delaware and Rhode Island to a high of 0.34 in Montana. Four states (Alaska, Illinois, Montana, and Vermont) had a coefficient of variation higher than the coefficient for the United States.

When total expenditures were adjusted for cost-of-education differences, the coefficient of variation for total expenditures per pupil across the United States decreased to 0.24. Ten states exceeded the national coefficient after cost adjustments: Alaska, Minnesota, Montana, New Hampshire, North Dakota, South Dakota, Texas, Vermont, Wisconsin, and Wyoming. Cost adjustments increased the range between the lowest-variation and highest-variation states. After cost adjustments, the coefficient of variation ranged from a low of 0.09 in Delaware, Florida, Kentucky, and Maryland to a high of 0.38 in Montana.

Gini Coefficient

The Gini coefficient for unadjusted total expenditures per pupil across the United States was 0.14. A Gini coefficient of 0 means expenditures are distributed equally; higher values such as 0.14 imply expenditures are more concentrated among a smaller share of students. Variation across the states ranged

Table 2-2. Variation in total expenditures per pupil (unadjusted dollars), by state: 1997–98

State	Restricted range ratio		Coefficient of variation		Gini coefficient		Synthesized measure of variation	
	Value	Rank	Value	Rank	Value	Rank	Average rank	Average quartile
United States	1.16	†	0.27	†	0.14	†	†	†
Alabama	0.42	10	0.11	5	0.06	6	7.00	1
Alaska	1.15	46	0.33	48	0.14	46	46.67	4
Arizona	0.76	34	0.19	30	0.09	27	30.33	3
Arkansas	0.53	18	0.13	10	0.07	11	13.00	2
California	0.47	12	0.14	12	0.07	11	11.67	1
Colorado	0.59	23	0.15	17	0.07	11	17.00	2
Connecticut	0.52	15	0.15	17	0.08	17	16.33	2
Delaware	0.38	7	0.09	1	0.05	2	3.33	1
District of Columbia	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Florida	0.31	4	0.10	3	0.06	6	4.33	1
Georgia	0.59	23	0.14	12	0.07	11	15.33	2
Hawaii	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Idaho	0.70	30	0.20	32	0.10	31	31.00	3
Illinois	1.29	48	0.28	46	0.14	46	46.67	4
Indiana	0.58	21	0.15	17	0.08	17	18.33	2
Iowa	0.52	15	0.15	17	0.07	11	14.33	2
Kansas	0.51	13	0.18	24	0.08	17	18.00	2
Kentucky	0.35	6	0.10	3	0.05	2	3.67	1
Louisiana	0.38	7	0.12	8	0.06	6	7.00	1
Maine	0.80	37	0.21	34	0.10	31	34.00	3
Maryland	0.42	10	0.11	5	0.06	6	7.00	1
Massachusetts	0.77	35	0.21	34	0.11	37	35.33	3
Michigan	1.01	45	0.25	41	0.12	42	42.67	4
Minnesota	0.78	36	0.25	41	0.11	37	38.00	4
Mississippi	0.52	15	0.14	12	0.08	17	14.67	2
Missouri	0.89	43	0.20	32	0.11	37	37.33	4
Montana	1.15	46	0.34	49	0.15	48	47.67	4
Nebraska	0.68	29	0.18	24	0.08	17	23.33	2
Nevada	0.21	1	0.12	8	0.04	1	3.33	1
New Hampshire	0.84	40	0.25	41	0.13	44	41.67	4
New Jersey	0.73	33	0.18	24	0.10	31	29.33	3
New Mexico	0.64	26	0.18	24	0.08	17	22.33	2
New York	0.71	32	0.18	24	0.08	17	24.33	3
North Carolina	0.41	9	0.13	10	0.07	11	10.00	1
North Dakota	0.65	27	0.25	41	0.10	31	33.00	3
Ohio	0.87	41	0.22	36	0.11	37	38.00	4
Oklahoma	0.53	18	0.15	17	0.08	17	17.33	2
Oregon	0.57	20	0.18	24	0.09	27	23.67	3
Pennsylvania	0.90	44	0.23	37	0.12	42	41.00	4
Rhode Island	0.30	3	0.09	1	0.05	2	2.00	1
South Carolina	0.67	28	0.15	17	0.08	17	20.67	2
South Dakota	0.83	38	0.23	37	0.11	37	37.33	4
Tennessee	0.51	13	0.14	12	0.08	17	14.00	2
Texas	0.63	25	0.24	40	0.09	27	30.67	3
Utah	0.34	5	0.14	12	0.06	6	7.67	1
Vermont	1.47	49	0.31	47	0.16	49	48.33	4
Virginia	0.70	30	0.19	30	0.10	31	30.33	3
Washington	0.58	21	0.16	23	0.09	27	23.67	3
West Virginia	0.28	2	0.11	5	0.05	2	3.00	1
Wisconsin	0.83	38	0.23	37	0.10	31	35.33	3
Wyoming	0.87	41	0.25	41	0.13	44	42.00	4

†Not applicable.
[1]Variation is not measured in the District of Columbia or Hawaii where there is only one school district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

Table 2-3. Variation in total expenditures per pupil (cost-adjusted dollars), by state: 1997–98

State	Restricted range ratio		Coefficient of variation		Gini coefficient		Synthesized measure of variation	
	Value	Rank	Value	Rank	Value	Rank	Average rank	Average quartile
United States	1.00	†	0.24	†	0.12	†	†	†
Alabama	0.40	9	0.11	5	0.06	7	7.00	1
Alaska	1.13	47	0.31	47	0.14	47	47.00	4
Arizona	0.84	40	0.20	29	0.10	29	32.67	3
Arkansas	0.40	9	0.12	7	0.06	7	7.67	1
California	0.53	16	0.15	17	0.08	20	17.67	2
Colorado	0.51	15	0.17	21	0.08	20	18.67	2
Connecticut	0.59	23	0.15	17	0.08	20	20.00	2
Delaware	0.29	3	0.09	1	0.05	2	2.00	1
District of Columbia	([1])	([1])	([1])	([1])	([1])	([1])	([1])	([1])
Florida	0.28	2	0.09	1	0.04	1	1.33	1
Georgia	0.36	5	0.13	10	0.06	7	7.33	1
Hawaii	([1])	([1])	([1])	([1])	([1])	([1])	([1])	([1])
Idaho	0.74	31	0.21	32	0.11	35	32.67	3
Illinois	1.10	46	0.24	38	0.12	43	42.33	4
Indiana	0.50	14	0.14	14	0.07	13	13.67	2
Iowa	0.57	19	0.18	25	0.07	13	19.00	2
Kansas	0.70	27	0.23	37	0.10	29	31.00	3
Kentucky	0.36	5	0.09	1	0.05	2	2.67	1
Louisiana	0.44	12	0.12	7	0.06	7	8.67	1
Maine	0.91	42	0.22	35	0.11	35	37.33	4
Maryland	0.36	5	0.09	1	0.05	2	2.67	1
Massachusetts	0.77	36	0.20	29	0.11	35	33.33	3
Michigan	0.81	39	0.24	38	0.11	35	37.33	4
Minnesota	0.75	34	0.26	42	0.11	35	37.00	4
Mississippi	0.58	21	0.13	10	0.07	13	14.67	2
Missouri	0.71	29	0.18	25	0.10	29	27.67	3
Montana	1.27	48	0.38	49	0.16	48	48.33	4
Nebraska	0.77	36	0.22	35	0.10	29	33.33	3
Nevada	0.25	1	0.14	14	0.05	2	5.67	1
New Hampshire	0.97	45	0.27	44	0.13	45	44.67	4
New Jersey	0.71	29	0.18	25	0.09	26	26.67	3
New Mexico	0.60	24	0.21	32	0.08	20	25.33	3
New York	0.54	18	0.17	21	0.07	13	17.33	2
North Carolina	0.46	13	0.13	10	0.06	7	10.00	1
North Dakota	0.78	38	0.29	46	0.11	35	39.67	4
Ohio	0.74	31	0.20	29	0.10	29	29.67	3
Oklahoma	0.60	24	0.17	21	0.09	26	23.67	2
Oregon	0.74	31	0.19	28	0.09	26	28.33	3
Pennsylvania	0.76	35	0.21	32	0.10	29	32.00	3
Rhode Island	0.38	8	0.11	5	0.06	7	6.67	1
South Carolina	0.57	19	0.14	14	0.07	13	15.33	2
South Dakota	0.84	40	0.25	40	0.12	43	41.00	4
Tennessee	0.53	16	0.13	10	0.07	13	13.00	2
Texas	0.70	27	0.28	45	0.11	35	35.67	3
Utah	0.42	11	0.16	19	0.07	13	14.33	2
Vermont	1.50	49	0.33	48	0.16	48	48.33	4
Virginia	0.58	21	0.16	19	0.08	20	20.00	2
Washington	0.65	26	0.17	21	0.08	20	22.33	2
West Virginia	0.30	4	0.12	7	0.05	2	4.33	1
Wisconsin	0.95	44	0.25	40	0.11	35	39.67	4
Wyoming	0.92	43	0.26	42	0.13	45	43.33	4

†Not applicable.
[1]Variation is not measured in the District of Columbia or Hawaii where there is only one school district.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

from a low of 0.04 in Nevada to a high of 0.16 in Vermont. Two states (Montana and Vermont) had a Gini coefficient higher than the coefficient for the United States.

Cost-of-education adjustments reduced the Gini coefficient across the United States to 0.12. Montana and Vermont still exceeded the United States level of variation, and Alaska, New Hampshire and Wyoming joined the group. Cost adjustments did not affect the range of variation. After adjustments, the Gini coefficient ranged from a low of 0.04 in Florida to a high of 0.16 in both Montana and Vermont.

Overall Variation

To take all three measures of variation into account at once, a synthesized measure of variation was created. The states were ranked on each of the three measures of variation, with the lowest-ranking states being those with the values closest to zero. The three rank values for each state were then averaged to create an "average rank" for the state. The states were then assigned to quartiles based on their average relative rank value.

In a synthesis of the three unadjusted variation measures, the South had the highest percentage of states in the quartiles with the lowest variation, both before and after cost adjustments (88 and 94 percent, respectively) (table 2-4). Before cost adjustments, the Northeast had the highest percentage of states in the quartiles with the greatest variation (78 percent) and the Midwest had the highest percentage after adjustments (83 percent). There was no change in the percentage of Western states in the lowest and highest quartiles (42 and 58 percent, respectively) when cost adjustments were made (figure 2-1).

Table 2-4. Variation in total expenditures per pupil, by region: 1997–98

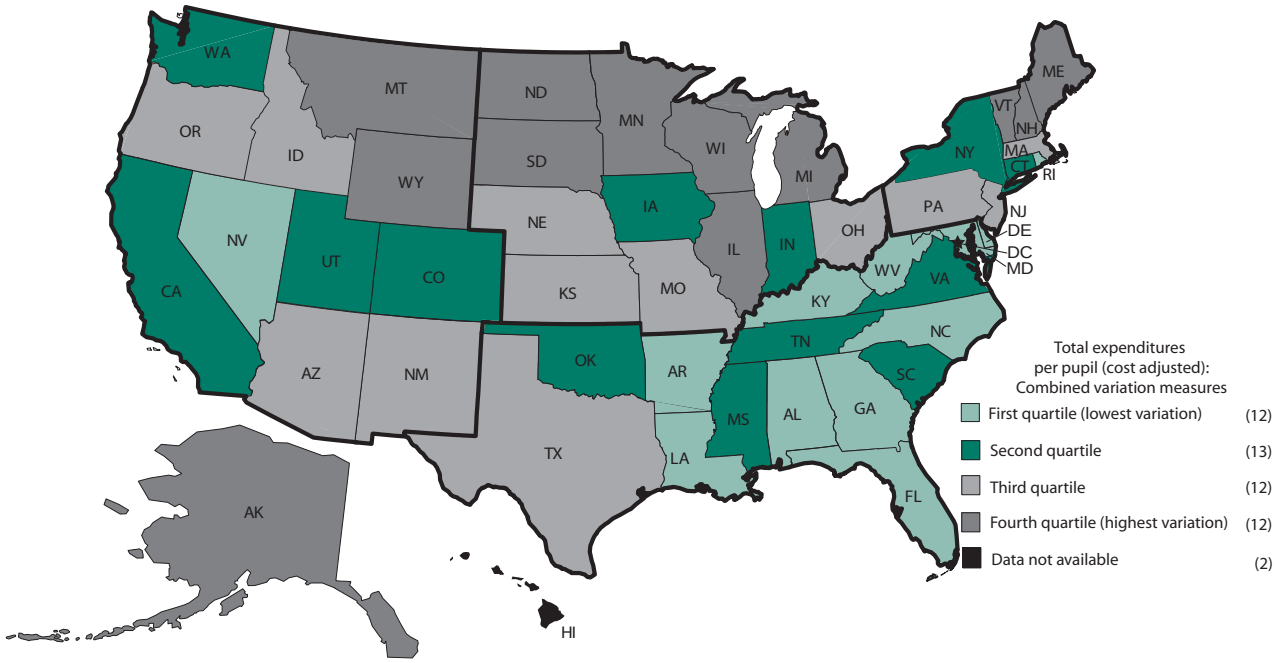
Region	Percent of states in quartiles 1 and 2 (low variation)	Percent of states in quartiles 3 and 4 (high variation)
Unadjusted total expenditures per pupil		
Northeast	22	78
Midwest	33	67
South	88	12
West	42	58
Cost-adjusted total expenditures per pupil		
Northeast	33	67
Midwest	17	83
South	94	6
West	42	58

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

Relationship Between Total Expenditures Per Pupil and Selected District Fiscal and Demographic Characteristics

For the United States as a whole, total expenditures per pupil in unadjusted dollars showed a positive relationship with a school district's median household income (+0.29) and its median housing value (+0.28) (table A-3). Similarly, at the state level, median housing value was positively related to total expenditures per pupil in half of the 40 states with available data; the relationship was strongly positive in 5 states (Florida, Illinois, Maryland, Pennsylvania, and Virginia). In five Western states (Alaska, Montana, Nebraska, Nevada, and North Dakota) expenditures per pupil and housing value were negatively related (table 2-5). In contrast, median household income was less often related to total expenditures per pupil in the states. Almost half of the 40 states with available data (18 before cost adjustments, 16 after) showed no statistically significant relationship between district income and total expenditures per pupil, 5 states showed a moderate negative relationship between income and expenditures, and 10

Figure 2-1. Synthesis of variation measures of total expenditures per pupil (cost-adjusted dollars), by state: 1997–98



NOTE: Variation is not measured in the District of Columbia or Hawaii where there is only one school district. Regions are delineated in black; Alaska and Hawaii are part of the Western Region.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98."

states showed a moderate positive relationship. Four states (Louisiana, Maryland, New York, and Virginia) showed a strong positive relationship between median household income and a district's total expenditures per pupil.

After cost adjustments, the relationship between district wealth and total expenditures per pupil was weak (+0.07 for median household income, not statistically significant for housing value) for the United States as a whole (table A-4). Adjusted total expenditures per pupil showed a strong positive relationship with a district's median housing value in one state (Maryland) and a moderate positive relationship in eight other states (Alabama, Florida, Illinois, Michigan, Ohio, Pennsylvania, South Carolina, and Virginia). Thirteen states showed a negative relationship between adjusted expenditures per pupil and median housing value (figure 2-2). No state showed a strong positive relationship between a district's median household income and adjusted total expenditures per pupil, and only 8 states (Illinois, Louisiana, Maryland, Michigan, New York, Ohio, Pennsylvania, and Virginia) showed a moderate positive relationship between these variables. In contrast, one state (Alaska) showed a strong negative relationship between median household income and total expenditures per pupil. In more than one-third of the states reporting data (15), there was a moderate negative relationship between median household income and cost-adjusted total expenditures per pupil (figure 2-3).

Total expenditures per pupil showed a weak relationship with minority enrollment for the United States as a whole, both before (+0.05) and after (-0.06) cost adjustments (tables A-3 and A-4). This was the case in most states as well. Three states (Alaska, Massachusetts, and Missouri) showed a strong positive relationship between minority enrollment and total expenditures per pupil before cost adjustments and two states (Alaska and Massachusetts) showed this relationship after cost adjustments. Half of the states with sufficient data (19 before cost adjustments, 21 after) showed no relationship between the variables (figure 2-4).

Table 2-5. Correlations between total expenditures per pupil and selected fiscal and demographic characteristics, by state: 1997–98

Characteristics	States (before cost adjustments)	States (after cost adjustments)
Minority enrollment		
Strong positive relationship	Alaska, Massachusetts, Missouri	Alaska, Massachusetts
Moderate positive relationship	Arizona, California, Connecticut, Illinois, Indiana, Minnesota, Montana, North Dakota, Ohio, Oregon, Tennessee, Utah, Washington	Arizona, Indiana, Minnesota, Missouri,[1] Montana, North Dakota, Ohio, Oregon
Weak positive relationship	*US overall*	California[1]
Weak negative relationship	Nebraska, New York, Pennsylvania	*US overall*[1]
Moderate negative relationship	New Hampshire, Texas	Iowa,[1] Kansas,[1] Louisiana,[1] Nebraska,[1] New Hampshire, New York,[1] Pennsylvania,[1] Texas
Strong negative relationship	[none]	[none]
No significant relationship	Alabama, Delaware, Florida, Idaho, Iowa, Kansas, Louisiana, Maine, Maryland, Michigan, Nevada, North Carolina, Rhode Island, South Carolina, Vermont, Virginia, West Virginia, Wisconsin, Wyoming	Alabama, Connecticut,[1] Delaware, Florida, Idaho, Illinois,[1] Maine, Maryland, Michigan, Nevada, North Carolina, Rhode Island, South Carolina, Tennessee,[1] Utah,[1] Vermont, Virginia, Washington,[1] West Virginia, Wisconsin, Wyoming
District poverty rate		
Strong positive relationship	Alaska	Alaska
Moderate positive relationship	Arizona, California, Connecticut, Indiana, Massachusetts, Minnesota, Missouri, Montana, North Dakota, Oregon, Utah	Arizona, California, Connecticut, Indiana, Kansas,[1] Massachusetts, Minnesota, Missouri, Montana, Nebraska,[1] North Dakota, Oregon, Tennessee,[1] Utah, Washington[1]
Weak positive relationship	[none]	[none]
Weak negative relationship	*US overall*	*US overall*
Moderate negative relationship	Louisiana, Michigan, New York, Pennsylvania, Texas, Virginia	Louisiana, Michigan, New York, Pennsylvania
Strong negative relationship	[none]	[none]
No significant relationship	Alabama, Delaware, Florida, Idaho, Illinois, Iowa, Kansas, Maine, Maryland, Nebraska, Nevada, New Hampshire, North Carolina, Ohio, Rhode Island, South Carolina, Tennessee, Vermont, Washington, West Virginia, Wisconsin, Wyoming	Alabama, Delaware, Florida, Idaho, Illinois, Iowa, Maine, Maryland, Nevada, New Hampshire, North Carolina, Ohio, Rhode Island, South Carolina, Texas,[1] Vermont, Virginia,[1] West Virginia, Wisconsin, Wyoming
Median household income		
Strong positive relationship	Louisiana, Maryland, New York, Virginia	[none]
Moderate positive relationship	Alabama, Florida, Illinois, Michigan, North Carolina, Ohio, Pennsylvania, South Carolina, Texas, Washington, *US overall*	Illinois, Louisiana,[1] Maryland,[1] Michigan, New York,[1] Ohio, Pennsylvania, Virginia[1]
Weak positive relationship	Missouri	*US overall*[1]
Weak negative relationship	California, Nebraska	[none]
Moderate negative relationship	Alaska, Arizona, Massachusetts, Montana, North Dakota	Arizona, California,[1] Indiana,[1] Iowa,[1] Kansas,[1] Maine,[1] Massachusetts, Minnesota,[1] Missouri,[1] Montana, Nebraska,[1] North Dakota, Oregon,[1] West Virginia,[1] Wisconsin[1]
Strong negative relationship	[none]	Alaska[1]
No significant relationship	Connecticut, Delaware, Idaho, Indiana, Iowa, Kansas, Maine, Minnesota, Nevada, New Hampshire, Oregon, Rhode Island, Tennessee, Utah, Vermont, West Virginia, Wisconsin, Wyoming	Alabama,[1] Connecticut, Delaware, Florida,[1] Idaho, Nevada, New Hampshire, North Carolina,[1] Rhode Island, South Carolina,[1] Tennessee, Texas,[1] Utah, Vermont, Washington,[1] Wyoming
Median housing value		
Strong positive relationship	Florida, Illinois, Maryland, Pennsylvania, Virginia	Maryland
Moderate positive relationship	Alabama, Indiana, Louisiana, Massachusetts, Michigan, Missouri, New Hampshire, New York, North Carolina, Ohio, South Carolina, Tennessee, Texas, Vermont, Washington, *US overall*	Alabama, Florida,[1] Illinois,[1] Michigan, Ohio, Pennsylvania,[1] South Carolina, Virginia[1]
Weak positive relationship	California	New York[1]
Weak negative relationship	[none]	[none]
Moderate negative relationship	Montana, Nebraska, North Dakota	Arizona,[1] California,[1] Iowa,[1] Kansas,[1] Maine,[1] Minnesota,[1] Missouri,[1] Montana, Nebraska, North Dakota, Wisconsin[1]
Strong negative relationship	Alaska, Nevada	Alaska, Nevada
No significant relationship	Arizona, Connecticut, Delaware, Idaho, Iowa, Kansas, Maine, Minnesota, Oregon, Rhode Island, Utah, West Virginia, Wisconsin, Wyoming	Connecticut, Delaware, Idaho, Indiana,[1] Louisiana,[1] Massachusetts,[1] New Hampshire,[1] North Carolina,[1] Oregon, Rhode Island, Tennessee,[1] Texas,[1] Utah, Vermont,[1] Washington,[1] West Virginia, Wyoming, *US overall*[1]

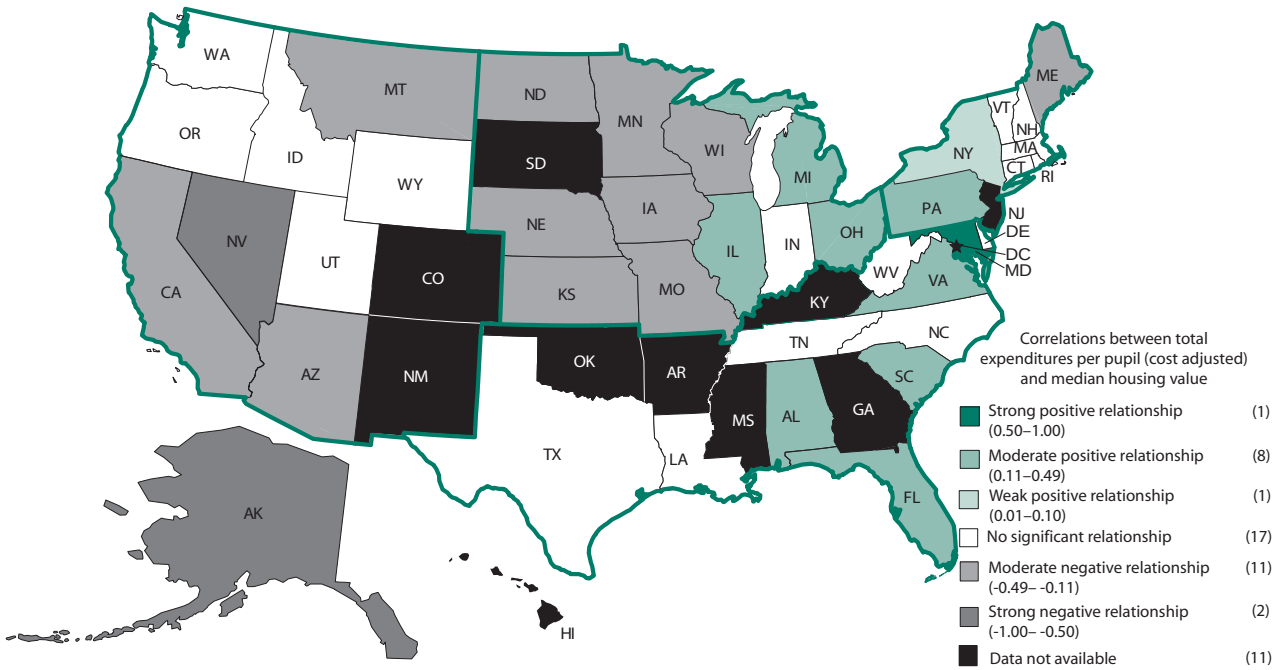
Table 2-5. Correlations between total expenditures per pupil and selected fiscal and demographic characteristics, by state: 1997–98—Continued

Characteristics	States (before cost adjustments)	States (after cost adjustments)
Student membership		
Strong positive relationship	[none]	[none]
Moderate positive relationship	Indiana, Ohio	[none]
Weak positive relationship	[none]	[none]
Weak negative relationship	Iowa, Oklahoma, *US overall*	California,[1] Nebraska,[1] US *overall*
Moderate negative relationship	Alaska, Arizona, Colorado, Idaho, Kansas, Maine, Montana, New Hampshire, New Mexico, North Dakota, Oregon, Texas, Utah, Vermont, Washington, Wyoming	Alaska, Arizona, Arkansas,[1] Colorado, Connecticut,[1] Idaho, Iowa,[1] Kansas, Maine, Missouri,[1] Montana, New Hampshire, New Jersey,[1] New Mexico, North Carolina,[1] North Dakota, Oklahoma,[1] Oregon, South Dakota,[1] Texas, Utah, Vermont, Washington, Wisconsin, Wyoming
Strong negative relationship	[none]	[none]
No significant relationship	Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Virginia, West Virginia, Wisconsin	Alabama, Delaware, Florida, Georgia, Illinois, Indiana,[1] Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Nevada, New York, Ohio,[1] Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, West Virginia

[1]State changed categories after cost adjustments.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

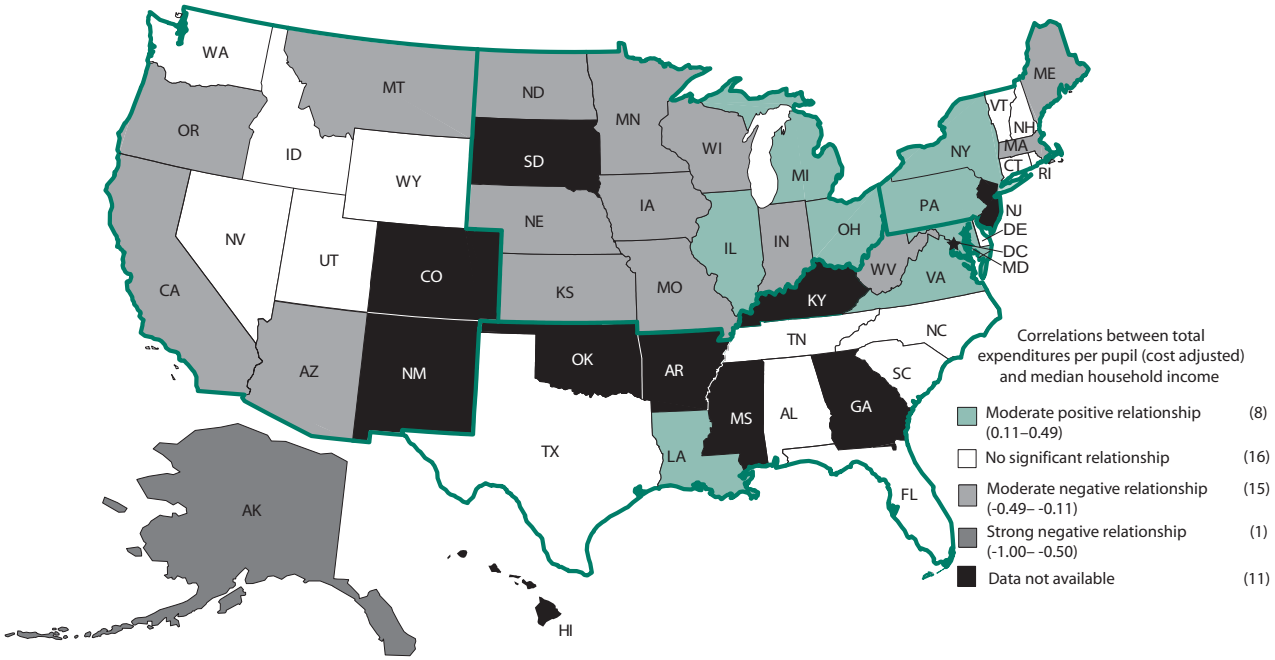
Figure 2-2. Correlations between total expenditures per pupil and median housing value (cost-adjusted dollars), by state: 1997–98



NOTE: No state-level correlation analysis was possible for the District of Columbia or Hawaii since they only have one district. Nine other states (Arkansas, Colorado, Georgia, Kentucky, Mississippi, New Jersey, New Mexico, Oklahoma, and South Dakota) were excluded from state-level correlation analysis because more than 50 percent of the school districts were missing Census data. Regions are delineated in green; Alaska and Hawaii are part of the Western Region.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

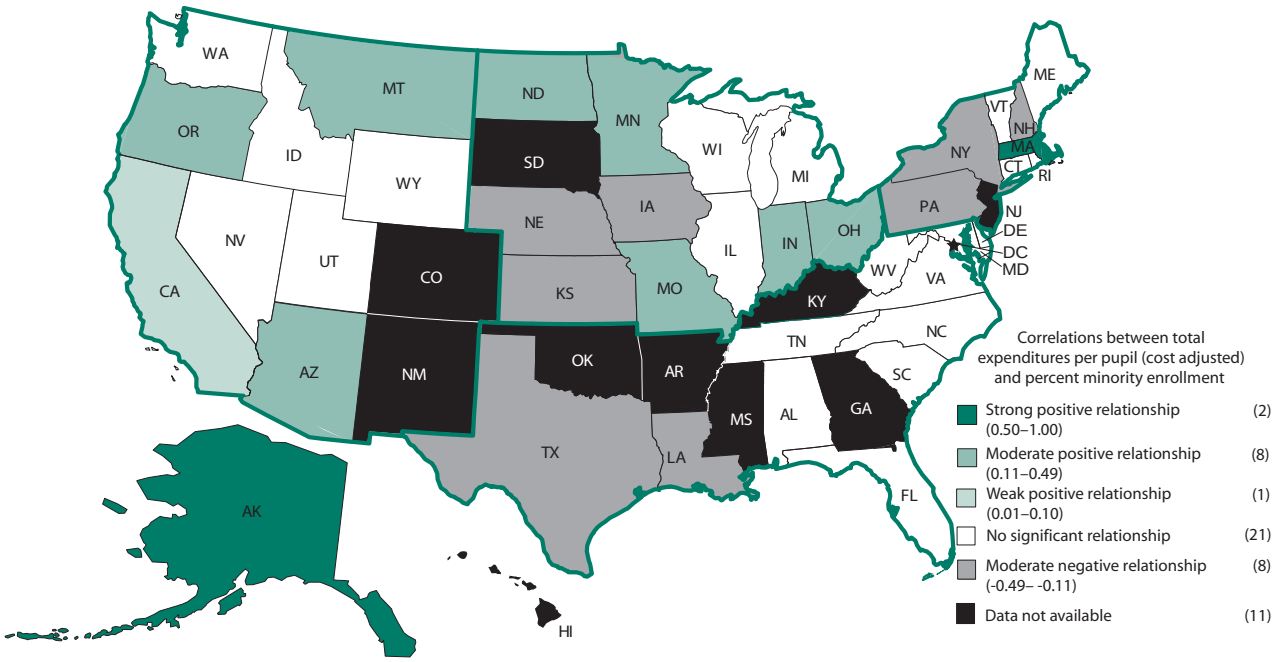
Figure 2-3. Correlations between total expenditures per pupil and median household income (cost-adjusted dollars), by state: 1997–98



NOTE: No state-level correlation analysis was possible for the District of Columbia or Hawaii since they only have one district. Nine other states (Arkansas, Colorado, Georgia, Kentucky, Mississippi, New Jersey, New Mexico, Oklahoma, and South Dakota) were excluded from state-level correlation analysis because more than 50 percent of the school districts were missing Census data. Regions are delineated in green; Alaska and Hawaii are part of the Western Region.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

Figure 2-4. Correlations between total expenditures per pupil and percent minority enrollment (cost-adjusted dollars), by state: 1997–98

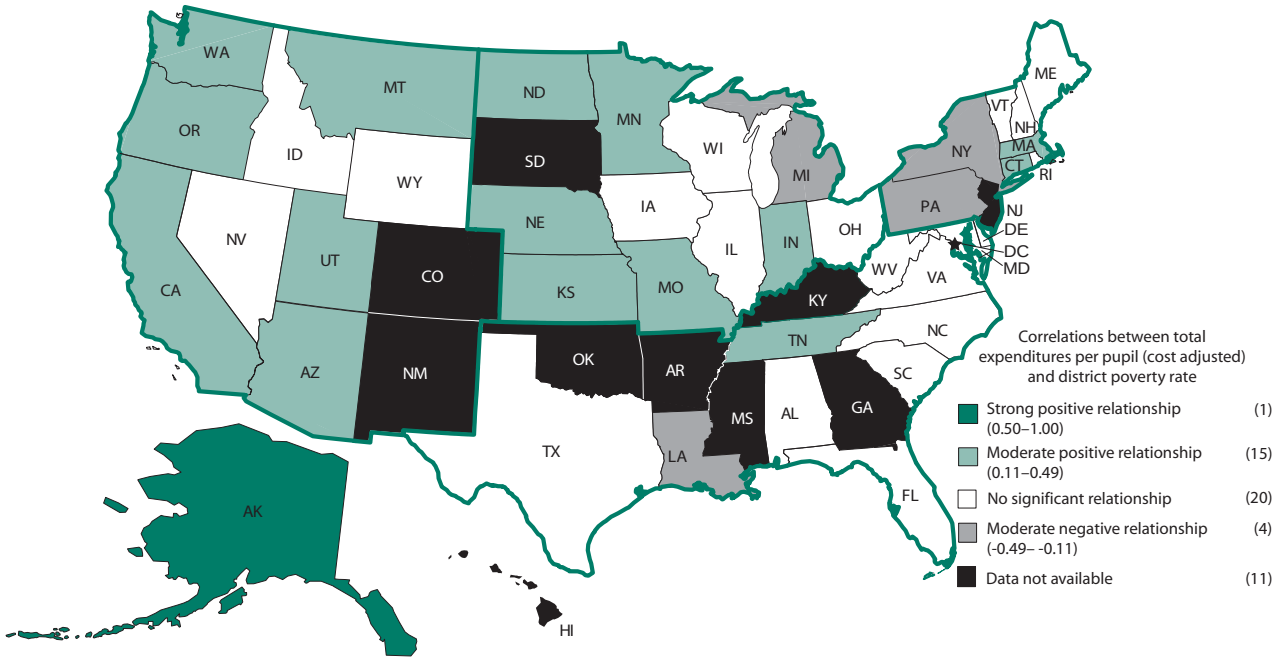


NOTE: No state-level correlation analysis was possible for the District of Columbia or Hawaii since they only have one district. Nine other states (Arkansas, Colorado, Georgia, Kentucky, Mississippi, New Jersey, New Mexico, Oklahoma, and South Dakota) were excluded from state-level correlation analysis because more than 50 percent of the school districts were missing Census data. Regions are delineated in green; Alaska and Hawaii are part of the Western Region.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.

District poverty rate also showed little relationship with total expenditures per pupil, both at the national level (-0.10 before cost adjustments, -0.04 after) and in the states. Only one state (Alaska) showed a strong positive relationship between the district poverty rate and total expenditures per pupil both before and after cost adjustments. Half of the 40 states with sufficient data (22 before cost adjustment, 20 after) showed no relationship between district poverty rate and expenditures per pupil (figure 2-5).

Figure 2-5. Correlations between total expenditures per pupil and district poverty rate (cost-adjusted dollars), by state: 1997–98



NOTE: No state-level correlation analysis was possible for the District of Columbia or Hawaii since they only have one district. Nine other states (Arkansas, Colorado, Georgia, Kentucky, Mississippi, New Jersey, New Mexico, Oklahoma, and South Dakota) were excluded from state-level correlation analysis because more than 50 percent of the school districts were missing Census data. Regions are delineated in green; Alaska and Hawaii are part of the Western Region.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "School District Financial Survey (Form F-33): School Year 1997–98" and U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census School District Special Tabulation.